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IDENTIFIERS WESTERN STATES SMALL SCHOOLS PROJECT

ABSTRACT

TWO PROJECTS OF INDIVIDUALIZED INSTRUCTION ARE REPORTED IN THIS DOCUMENT. THESE PROJECTS WERE CARRIED OUT IN SMALL HIGH SCHOOLS IN COLORADO AND ARE REPORTED BY THE INSTRUCTORS INVOLVED. INCLUDED IN THE REPORTS ARE THE RATIONALE, OBJECTIVES, DESCRIPTION OF STUDENT GROUPS, EXTENSIVE PROCEDURAL DESCRIPTION, AND RESULTS AND RECOMMENDATIONS. THE RESULTS INDICATE THAT INDIVIDUALIZED INSTRUCTION WAS HIGHLY EFFECTIVE IN EXTREMELY HETEROGENEOUS GROUPS IN THE SMALL-SCHOOL SITUATION. (DK)

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COLORADO WESTERN STATES SMALL SCHOOLS PROJECT

DOCUMENTATION

[Individualizing the Study of U. S. History and Government in the Small High School]

[1964]

An Individual Approach to the Teaching of United States History

by Charles Holmes

A Plan for Individualizing Instruction for the Senior Government Class Through the Use of the Problem Solving Unit

by Norman E. Higgs

COLO. STATE DEPT. OF EDUCATION · DENVER
BYRON W. HANSFORD
COMMISSIONER

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THE WESTERN STATES SMALL SCHOOLS PROJECT

The Western States Small Schools Project, partly financed by a grant from the Ford Foundation, is designed to help the state education agencies in Colorado, Arizona, Nevada, New Mexico, and Utah in their efforts to improve instruction in the necessarily existent small schools. The Project began January, 1961 and will end August, 1965. Policy Board of the Project is composed of the chief state school officers of the cooperating states. Ralph G. Bohrson, Coordinator of the WSSSP, is headquartered in Denver, at the Colorado State Department of Education.

The Colorado portion of the Project, involving more than two hundred teachers and administrators in approximately thirty schools has been working in the following areas:

-- Ungraded or Continuous Progress Programs

-- Use of Self-Instructional Materials

-- Teacher Education and In-Service Programs

-- Institutes for Rural School Board Members

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An Individual Approach To the Teaching of United States History by Charles Holmes, Meeker HS, Meeker, Colo. 1963-64

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INTRODUCTION

The traditional method of teaching United States History is to assign a chapter or part of a chapter, the student reads the assignment, the teacher lectures and discusses; all this is followed by recitation and testing. This method leaves few opportunities for the student to develop any particular area of interest.

The writer found that many potentially good students did only the assigned work and showed an attitude of boredom toward United States History. The teacher felt that a different approach should be used so that all students could progress at their own speed and develop the area of special interest.

Limitations of the Study

The study which was conducted from January of 1963 to the spring of 1964 had several limitations:

(1) New study habits had to be developed by the students.

(2) Materials such as filmstrips, records, and supplementary reading had to be organized for each unit.

(3) Since United States History is taught only one year in the junior high school, the measuring instruments used only tested a period of eight months with each group.

Purpose of the Study

The two eighth grade sections of United States History that the writer teaches are grouped heterogeneously. Because of the grouping there exists a wide range of interest and ability. Some students will find one chapter more interesting than another chapter and would like to learn more about that particular period of history. When this situation arises, other learning mediums such as filmstrips, records, tapes, encyclopedias, and discussion groups are used.

Objectives of the Study

(1) To develop an ability to use learning media other than the text

to study a particular section of history.

(2) To develop an appreciation for historical books, historical novels, and biographies.

(3) To develop skill in the use of certain equipment that will enable the student to study by himself. This equipment would include tape recorders, filmstrip viewers, and record players.

(4) To develop desirable study habits, behavior patterns, and attitudes.

(5) To develop an ability to distinguish between fact and opinion.

The Procedure

On Monday, the teacher gives a brief preview of the chapter. This usually takes 15 or 20 minutes. The students will then finish the 40 minute period by starting to read the chapter. The students continue to read and study the chapter on Tuesday, Wednesday, and Thursday. By the end of the period on Tuesday, usually two or three of the students feel they have the chapter mastered. These students will then take a short 10 to 15 question readiness test. This objective type test is divided into sections covering vocabulary, important people, and the subject matter of the chapter.

After the student completes the test, he comes to the teacher's desk and corrects his own paper from the test key. If he shows weakness in a certain area or all areas, he returns to his individual study or a study group. Later in the week, when he feels he has his weakness overcome, he returns to the teacher who tries to determine his mastery of the materials by questions.

When the student demonstrates satisfactory mastery of the textbook, he is encouraged to listen to records, view filmstrips, listen to tapes, read picture encyclopedias, or other available enrichment materials such as: school library or classroom paperback library histories, biographies, and historical novels for the rest of the week, except for the time he requires to take the more comprehensive 30 to 40 question objective weekly final test on Friday.

The students also list what they have learned from the enrichment materials on the back of the test. The tests are corrected and discussed near the end of the period.

The tape recorder has proven to be a very valuable piece of equipment in this project. In addition to the fifteen purchased prepared tapes, it has been used to record student book reports and to record teacher lectures on the chapter being studied. The students have a choice of giving an oral book report, written report, or one on the tape recorder. About one-half of the students prefer to use the tape recorder. Four book reports are required of each student for the year, one report for each nine weeks. Several of the students have given more than the required four.

The teacher prepares and records a lecture on each chapter. This lecture on each chapter covers the vocabulary, important people, places and events. These tapes are made available to the students on the day before the tests. Most of the students listen to the taped lectures, but some feel they have mastered the material well enough by themselves and continue their individualized study.

All of the students keep a personal file of their work in a central file cabinet in the classroom. The following items are kept in their manila folders: tests, book reports, research papers, and student diaries. The student diaries are brought up to date near the end of the period each day.

In the small discussion groups, the students go over the questions at the end of the chapter, the vocabulary words, and the important people. When the small group is formulated, a secretary is appointed to record the main points of the discussion. These points are written on a form that has been prepared by the teacher and made accessible to the students by placing them in a folder in their file cabinet drawer.

One interesting observation has been the manner in which the groups have assembled at different times. On one day the groups will appear to be very

homogeneous and on another day very heterogeneous. Of course there are several students that study only with each other. It is seldom if ever that a very high ability student studies with a very low ability student, but when there is a group of four or five students together this combination will sometimes appear.

The teacher selects tapes, filmstrips, and records, for student use, that are closely correlated with the chapter that is being studied. In the event there is not a sufficient number of correlated records or filmstrips for the chapter, the student selects records or filmstrips that will enable him to review or preview the other chapters.

The equipment that is being used enables the students to listen to one of the three record players, or view one of the two filmstrip viewers, or study individually or in a small group. This can be done under the supervision of the teacher with a minimum of commotion in the room.

Summary of Related Research

The author has not read any procedure where this medium of learning has been utilized for individualizing the teaching of United States History.

Results of the Study

Because the author had each group for only one school year, he felt that the use of standardized tests for a measuring instrument would not be valid. He felt that the validity of day by day teacher observation of student attitude and growth would be much higher.

This teacher feels that each student has had a greater learning responsibility placed upon his shoulders. It is the opinion of the teacher that more students will do more work when given the opportunity to work within the framework of an individualized program. The better students are not held back by minimum group standards that are set in the strictly teacher-dominated classroom.

Most of the students use good study habits and make good use of their class time. Because they do use their time wisely, there is very little homework. Even without the homework the classes manage to cover thirty-one chapters in the textbook, and spend approximately four weeks working on a unit covering the framework of the federal government. Many of the students do read at least part of their library book assignments at home.

Comments from the students were solicited on a questionnaire prepared by the teacher. Some of the questions and responses are as follows:

Question: Do the related records give you a better understanding of the chapter being studied?

Responses:
(1) It tells the story of your chapter.
(2) The records helped me a lot.
(3) You understand more of or about the chapter.
(4) More information on certain men and dates.
(5) They give you information that isn't in the chapter.

Question: Do the related filmstrips give you a better understanding of the chapter being studied?

Responses:
(1) You can view what is going on the chapter.
(2) They are helpful by showing you pictures of things.
(3) It shows you more of what has happened.
(4) I think the filmstrips help you a lot more than the records.
(5) You can read and see what's happening.

Question: Do you usually have enough time to study the chapter during class time?

Responses:
(1) I do if I want to.
(2) Yes, if you use your time to study.
(3) I do almost all my studying in class.
(4) We have plenty of time to read the chapters and listen to the records too.
(5) I think more than a week would make it boring.

The answers received from the following question encouraged the teacher to proceed for another year with the individualized instruction.

Question: Have you enjoyed studying history more_____or less_____ the last fifteen chapters as compared to the first fifteen chapters?

Responses: (1) More. You can get a broader view with more outside materials.

(2) More. You can read and study at your own speed.

(3) More. Because it is a challenge.

(4) More. I like studying at your own rate. It helps me to know the chapter better.

(5) More. You get more out of it when you get to use more materials.

An interesting observation by this teacher has been the way the students have set study patterns for themselves. After a general exploring of the different available materials at the beginning of the year, most of the students became rather habitual in their study habits. Some have spent very little time doing anything other than reading either the text or paperbacks. Some have spent a great deal of time viewing filmstrips after they read the chapter. Others have spent most of their time reading the text and listening to records. A few students have turned to the picture encyclopedias for information in addition to the text.

Improvement Resulting From the Study

Individualizing the instruction of history by the use of technological devices and supplementary materials was relatively new to the Meeker Junior High School. For the author this experience was one of complete satisfaction.

After the first few weeks of school, students moved freely to all the sources of learning. Very little time was spent by the author in setting up tape recorders, filmstrips, or any other equipment. Even the checking out of paperback books became a simple task.

Students seemed anxious to use as many of the filmstrips and recordings

relating to the assigned work. Many students waited until the deadline before giving book reports, either oral or written; but since they had been given another option of giving them on the tape recorder, several more students were ahead of the deadline. After a student had recorded his report he usually played it back. This part of the procedure helped the student to become more aware of his spoken vocabulary and made him aware of how he sounds to others. Approximately one-half of the students in the history class use this method of giving book reports.

Conclusions and Recommendations for Further Study

One of the advantages of using an approach to teaching such as this lies in the opportunity of the able and ambitious students to cover an abundance of material in a relatively short period of time. This teacher has observed students viewing as many as four forty-eight frame filmstrips in one class period. On test days some of these same students were able to list as many as fifteen additional points that were not covered on the test.

Teacher judgment should be used in allowing poor students or disinterested students to participate in the enrichment part of the program. This teacher feels that most of the slow readers can obtain much valuable information from the records and filmstrips.

Grading becomes somewhat of a problem in an endeavor such as this. At the present time the following procedure has been followed. An objective type test is given at the end of each chapter. The percent score is determined and used as a base score. One point is given for each item the student has listed on the back of the test that has not been covered on a test question and that pertains to the chapter just studied. It is possible for a student to receive more than 100 points on a given test. It is also possible for a student to have a nine weeks average of more than 100. A 70-point average is still passing and a 93-point average is still an A.

It would be highly desirable to have teachers that are interested or engaged in similar teaching procedures to communicate with each other for the purpose of exchanging ideas or listing materials and equipment that have proven successful in their teaching experiences.

It is further recommended that the teacher and other staff members that are involved be constantly alert to any new or improved materials appearing on the market that could be useful in the program. The current "Life" picture encyclopedias that are in the process of being published could offer some interesting possibilities. Each volume is accompanied with a long-playing record. The district is in the process of purchasing this addition as it becomes available.

This teacher is satisfied with the cooperation and responsibility that was given by this year's history students. Their progress as measured by traditional testing methods was very satisfactory. Their growth as measured by the two Stanford Social Studies Achievement tests given at the beginning and the end of the year showed a class median growth of 13 months in grade placement for an 8-month period. Even though the class did satisfactory work, it is felt by the author that at the beginning of the year more time should be spent introducing and discussing the various enrichment materials and equipment. Perhaps the first chapter could be enriched by using several filmstrips related to the chapter. The parts of the filmstrip that are additional information to the chapter could be brought out by class discussion, and then have the students list these parts that they remembered on the back of the chapter test. A similar technique could be used with records for the next chapter, and picture encyclopedias for the next. It is the opinion of this teacher that this would be a better procedure than simply saying, "We have several sources of enrichment materials that are available to you after you have read the chapter."

APPENDIX I

Equipment and materials used in this project:

2	Viewlex previewers
2	Record players
1	Tape recorder
19	Sets of earphones
19	Volume controlled outlets
6	Individual study booths
1	Two drawer file cabinet
1	Set of Encyclopaedia Britannica Junior (15 volumes)
1	Set of Dictionary of American History (7 volumes)
1	Set of Album of American History (6 volumes)
1	Set of Pictorial Encyclopedia of American History (17 volumes)
1	Set of the Life History of the United States (12 volumes)
15	Volumes of Webster's New Collegiate Dictionaries
444	Various paperback books
75	Records
180	Filmstrips (historical)
18	Filmstrips (current event series published by the New York Times)
15	Prepared tapes

APPENDIX II

Cost Breakdown: Cost for materials used in the construction of the earphone panel.

Volume controls 5000 ohm	$ .69 each
Volume control plates	.21 each
Switch plates	.17 each
Jack outlets	.33 each
Control knobs	.48 each
100 feet of #22-2 shield wire	2.20 a roll
2 x 4 clear pine board	.50 bd. ft.

Norman E. Higgs
Silverton High School
Silverton, Colorado
1963-64

A PLAN FOR INDIVIDUALIZING INSTRUCTION FOR THE SENIOR GOVERNMENT CLASS THROUGH THE USE OF THE PROBLEM SOLVING UNIT

I. PERTINENT INFORMATION

This project was carried out at Silverton High School. Silverton is an isolated town high in the San Juan Mountains of Colorado. This class met in the school library which measured thirty-six feet by forty-two feet and with the class enrollment of participating students of eight to ten involved in the project. The library was selected for this project, because most of the work could be in research, and also for access to large tables located in this room. These large working areas are more ideal for group discussions and other group activities.

The writer had felt from the beginning, that this project should continue for several years. This scheme should be divided into one year phases with the emphasis each year on reviewing, evaluating as to the strengths and weaknesses, and improving on the preceding year's work.

II. REASONS FOR PROJECT

The writer has no formal data as to student needs that stimulated the pursuit of this method of instruction. However, there is a knowledge of student needs as a result of teaching experience in the field. The traditional method of teaching and grading are inadequate in a heterogeneous class as far as ability is concerned. A teacher should make all effort to reach each individual on their particular level or ability. The writer feels that this method of teaching will meet individual needs more effectively than the traditional method.

The curriculum had little to do with deciding upon the use of this activity. The writer feels that the "method" of teaching itself is the primary objective in this experimental project.

The students' attitudes and behaviors reflected and demonstrated a real need for some form of change in the teaching procedure. These reasons just stated stimulated the writer to look for a better method of teaching social studies as a live and vital subject. Most students sit in their social studies class and never see the reason for its existence, nor do they learn more than some unrelated facts. The writer feels that the method experimented upon not only challenges the student, but it gives direction and meaning to the course of study. It encourages critical thinking on the part of each pupil concerning the various phases of study as well as furnishes a variety of working levels that will keep the individual working in his or her ability range.

A teacher in a small school must teach several different subjects and in each class he faces a heterogeneous group as far as ability is concerned. The problem is to find some method of teaching that will overcome the obstacles presented by such a group as well as give the students the opportunity to work at their own speed and level. In addition to this, the writer feels that a device for encouraging critical thinking should replace teacher and textbook indoctrination. The slow and bright student can be challenged more effectively in a small school situation through the use of the method under discussion in this paper. Another advantage to this type of procedure would be a more economical and effective utilization of the teacher's time in the classroom.

III. RELATED RESEARCH

The interest generated in this activity did not come from the findings of those in the field of research, but rather from the needs that have been explained in the preceding paragraphs. Another source of stimulation was a course directed by Dr. Lynn Welden at Adams State College in Alamosa, Colorado, on the problem solving method. The interest and effort of the writer in this

project has in no way been required or prompted, but, has been solely for the personal satisfaction of improving the teaching method for a more effective means of making social studies something "real" for each individual being taught.

IV. PROCEDURE

1. Need. The writer's awareness of the inadequate method currently being practiced by most social studies teachers became more acute with his deepening years of experience. It became more apparent that for years the problem that had been diagnosed as student inadequacy was simply, in truth, an insufficient manner of presentation. The writer realized that he could not challenge students on such diverse intellectual levels with a method that recognized and directed its efforts toward only one plane of ability. The plane of classroom instruction is usually decided by the teacher, and in most instances, students both slow and bright are neglected and left to waste in such a situation. Once this was realized by the writer, the need was clear and the problem plainly evident.

2. Gathering preliminary data. The writer made use of several books concerned with the problem solving approach. A conference was held with Dr. Lynn Weldon, Adams State College, on the development of this approach. Discussions with others who had used this type of procedure supplied many valuable ideas on the application of this method to the individualization of instruction in the classroom. The writer then developed the units to be studied.

3. Selection and use of materials. During this phase of procedure, the writer had to throw open the complete files of the library to students. The major emphasis was placed upon the selection of books, magazines, and newspapers that had articles by noted authorities, who presented the facts about the subject under question. The majority of the material was actually selected

by the pupils themselves. However, the teacher did review and select movies, arrange firsthand experiences through guest speakers, and took advantage of community resources when they satisfied the criteria for this course. All materials had to show a relationship to the problem as well as to fulfill the other criteria of research. The teacher was able to review all materials to insure their value and effectiveness in meeting these requirements.

4. Planning and conducting class activities. The teacher introduced the units in several ways. These methods included presentation of a film or filmstrip, use of a guest speaker with some relationship to the problem, and by class discussion.

After each unit had been initiated, they were divided into three phases. These were as follows: (1) a period of investigation for each individual student in which he or she made their own discoveries; (2) a time of group consultation or discussion and various class activities; and (3) the determination of a solution and an evaluation of these hypotheses.

The period of student investigation of the problem dealt with the data and opinions given either by authority or fact. This was accomplished through the reading of books, magazines, and reports. Special emphasis was given to the understanding of the 'What' and 'Where' of finding authoritative sources. In pursuing this problem, the following things were done: individual investigation, group studies, individual projects, and class discussions. Each person was encouraged to work on his own level and speed. If success was to be felt by every individual, as well as the instructor, this phase had to be conducted on different levels to insure a feeling of accomplishment by everyone. The wide range of individual differences made it necessary for this project to provide a successful study on every possible level.

Audio-visual aids were used to aid the students in their formation of a hypothesis. The following aids were used for this purpose: pictures;

movies; filmstrips; and some tape recordings, made by people related in the field of study, as a stimulant for discussions in the classroom. These aids were also important in developing student understanding of the subject. Each student was given an individual project to work on that could assist the class in their comprehension and deeper realization of the full meaning of the topic under investigation. Some of these projects are included in the following enumeration: bulletin board, collecting newspaper articles, collecting cartoons, drawing maps, drawing diagrams, writing brief biographies of famous men, and keeping up-to-date bibliographies. The pupils were allowed to select the individual project that they wanted or were interested in the most.

The second period of time was used for the group to discuss the data found in the previous investigation and for the formation of some basic conclusions in their search for the final accepted solution. This was carried out through the use of round table discussions, panel discussions and debates. Trips were made at this time to areas that would benefit the students. For example, a trip to the county court house was made for the purpose of holding a mock trial during the study of the Judicial System. Also, group activities other than those already mentioned were carried out in the second phase of the unit organization and execution. A mock meeting of Congress was held and the actual passing of several bills was demonstrated in one such activity.

In the third period of time, the students were given class time to present, prove, and defend his or her hypothesis to the class. A general discussion was held and criticism was given by the group on each idea presented. These ideas were presented formally by individuals and the group as well. The class made decisions as to possible final solutions through this period of discussion and determined, to their best ability, the best possible solution which was accepted by the class as a whole.

5. Trying new methods and techniques. An evaluation of the methods and techniques used in each unit was made by the teacher after each unit was completed.

New and old ideas were used and combined together to find the best method for accomplishing the criteria of the unit. During the first part of any given single topic, a very simple procedure was followed which involved the use of the steps in the problem solving method. The teacher's position in the early stages of study was as a counselor or advisor to each pupil as assistance was indicated and needed. In the latter part of the unit, teacher-student conferences were held in which the individual discussed his current problems with respect to his particular phase of the unit. Individual guidance was continued by the teacher at this point. Any correlation to present day problems was brought out to strengthen a better understanding of our government.

In the last three units a great deal of time was given to activities that involved the students in areas related to the major problem. Such activities as individual projects, mock trials, study groups as well as debates were used to experiment in new areas. The students were asked, in the earlier phase of this project, to present a formal paper giving a statement of their hypothesis or hypotheses and the data that supported this conclusion or conclusions. In the latter units, the students were asked to write their data on note cards as they made their investigation and to organize these cards for examination by the teacher at the completion of the study. The instructor felt that this technique brought about better organization and caused more critical thinking on the part of the class as a whole.

6. Evaluating results. The criteria for evaluation of each unit was established with a number of things under consideration. The most prominent of these was the acceptance of the rule, or standard, for making judgment. This was determined through democratic procedures by the class. The establishment of a criteria to sound out the hypothetical problem solution must be met and agreed upon by both the students and the teacher. Once this agreement has been set, there should be no conflict with it. Standards should also be set and observed by the community. Since these standards have been

by the community, and accepted by the local school board, it is the responsibility of the teacher to see that they are upheld in the classroom.

The criteria for units involved the use of authority or authorities to substantiate the hypothetical problem solutions. The use of logic was necessary. A better understanding of the problem had to be gained by a study of the data and facts involved. The following six points were used for evaluating the students: (1) Does this conflict with known facts? (2) Is this a logical solution? (3) Does this answer completely satisfy the student's curiosity concerning the problem? (4) Has this solution stimulated the student to think? (5) Has the student gathered information to the best of his ability? and (6) Does the student have a satisfactory attitude in the class?

The writer, in the evaluation of this project, considered four specific areas to aid in the compilation of his data. Those were: (1) criteria for grading, (2) and evaluative questionnaire, (3) personal observation, and (4) an open questionnaire. Personal observation and criteria for grading gave the writer his own opinion while the questionnaires were designed to reflect and to reveal the opinions for the students as to the strengths and the weaknesses of the project.

Before the proper evaluation of this project can be determined, pertinent problem factors and side issues involved should be considered. The most outstanding of these was the isolation factor of the experimental group. The town of Silverton is high in the San Juan Mountains which lends an atmosphere of separation from the rest of the world. Many of the students had not traveled more than fifty to a hundred miles away from this community in their entire life. As a direct result of this factor, the limited experiences of the pupils and the limited community resources in this situation had a great deal of bearing upon the value and effectiveness of this experiment. The third factor was finding sufficient material for the study, which was especially difficult in a small high school. Another thing to be considered was the

involvement of the students' needs, interests, and concerns when they are on such diverse intellectual and reading levels. The use of ability grouping would have made this project much easier, but in a small school the teacher must deal with this type of classroom.

In the evaluation of the writer, he found several strengths and some weaknesses in this program. In his estimation, the strong points far outweighted the weaknesses. These strong points are as follows: (1) the students did some critical thinking on the problems given; (2) a great interest and desire to participate in the problem was noted by the writer as well as the effective way in which they worked; (3) the students had a much better understanding of the areas studied and a greater interest in these areas; (4) each student was able to work at his own speed and level which facilitated greater accomplishments or results; (5) good procedures in the making of decisions, conducting research and using scientific method of reaching conclusions were developed; and (6) the last and most important strength was the ability to challenge both the slow and the bright student in the same class and on the same unit of study.

There were four weaknesses as seen by the author of this project. They were: (1) the difficulty of the slow student to understand and to do the problem solving method, (2) the class did not cover as much of the subject as the teacher would have liked, but the study did go deeper in the areas studied; (3) the teacher did find it much harder to keep all students working when using the individual approach to class time; and (4) the teacher found it difficult to have sufficient materials for the students to study. One method of overcoming some of the weaknesses just mentioned would be to cut down on the units or rather have less involved units of study. Perhaps, the units used in this project were too broad and needed simplification. This would keep more interest and allow for time more consistent with the materials available.

VI. THE IMPROVEMENT RESULTING FROM THIS ACTIVITY

Basically, the improvements expected in the writer's earlier proposal were upheld. However, there were some areas in which the actual results fell short of the teacher's expectations and desires. These will be discussed in the following paragraphs with respect to these groups: the students, the teachers, the school, and the community.

1. Improvements for students. The students showed a more satisfying understanding of the subject as a result of the objective test. All of the students in the class did well on the test with the exception of two slow students. These tests (for each unit) were arranged in such a manner that a student would take a position in the solution of the problem, making all answers to the tests directly related to the position taken. These tests did show that the students had not only learned facts, but had done some critical thinking of their own on the subject. After each test was given and graded, the class was allowed to discuss any question within that test. The pupils could discuss any question they had missed and if they had good sound reasoning for their answer to a particular question, it would be marked correct. This was done as a measuring device for the teacher to determine the amount of critical thinking done on the part of the students.

It did reveal that the slow students had not done much analyzing of facts. However, the teacher felt with more experience in the preparation of such a test, as well as in teaching this particular method, this problem could be overcome.

Actual anecdotal records were not kept by the writer, but many incidents that occurred during this experiment are remembered. It was learned, in talking with the two brightest students, that both had grasped an understanding of the method of study as well as gained in insight into the subject being investigated. From conversations, the writer felt that the pupils appreciated

the opportunity to work at their own rate. Since the most advanced student in the class was killed, it is hard to make a final evaluation as to the effectiveness of this study on bright students. Only one other student could be placed within this group. Therefore, the conclusions of the teacher are based upon his results. Both his progress and interest in the subjects indicated that this was a good method for this type of student.

Four individuals composed the "above average group" in this project. Their scores on intelligence and achievement tests showed little variation. The comparison of the previous year with the results of this year's experimental project indicates the success of the problem solving plan of teaching. All of these students showed more interest and did more work than the former year had disclosed. One individual who could draw did an outstanding job in making cartoons that not only displayed his ability, but his clear insight into the subject with its up-to-date implications. On other occasions, other members of this group did outstanding work in other phases of endeavor.

The third group was classed as "below average." They were interested in the subjects under investigation, but seemed to find the problem solving method very difficult. However, they revealed a great deal of progress toward understanding this method at various stages in this project. Much of the teacher's time was spent in helping these four pupils solve their individual problems. The author feels that possibly the problem solving method should not be used with either this group or the slow group. However, it should be said, that this method was new to both the teacher and the students as well. Perhaps more experience with this type of plan would eliminate this factor, and cause better results in the individuals' response.

The slow students could not effectively tackle a problem with this method. However, they did display an interest throughout the whole year, whereas in the previous year the teacher found it difficult and almost impossible to maintain their interest with the traditional method of teaching. It is

felt, that if a student's interest is aroused and sustained, disregarding his or her ability, then somethirg has certainly been gained from the experience. The questionnaire disclosed the genuine pleasure or satisfaction of these two students with the course as well as the method being used.

Definite changes were noted in the students of this class as a result of this new method of classroom procedure. Without exception, they displayed more interest, a greater desire for learning, a greater willingness to accept responsibility, and a remarkable change in their attitude toward the course of government. Only two in the class did not accept responsibility, but the writer feels that this was due to the natural make-up of the individuals. It should be noted that a regular amount of work was accomplished and produced in this type of classroom than in any other course the teacher had ever taught. The class worked individually and most of their learning was done by gaining self-understanding. Six members did very well, while the rest of the class had to have a great deal of help from the teacher.

2. Improvements for teachers. The effect on the teaching practices as a result of this experiment was very evident. This teacher used the problem solving unit or method in his other classes. This materialized into assignments from which individualized study was accomplished successfully on the high school level. In these assignments the students would investigate some topic such as the administration of a president, and then write and discuss orally the strengths and weaknesses of his administration. It has also influenced the use of a more individualized type of classroom work, where a greater emphasis was placed upon critical thinking. These new methods were used in World History as well as American History.

The attitude of this teacher as a result of this project has not changed to a great extent. Perhaps, this was due to the writer's felt need for this type of teaching on the high school level for some time. There was and is a great need for some method of challenging the pupil on an individual level.

The important thing to this teacher, is the realization of how well this method has done with the experimental group. It has been felt, that it would be impossible to challenge a group of students on such diverse intellectual and achievement levels. A a result of this experiment, the writer feels confident that it can be accomplished.

There was a great deal of interest in the activities sponsored by this project by both faculty members and parents. Many discussions were held in which the other teachers showed an interest in the advantages of this type of method. However, no actual change in teaching methods were noted that directly resulted from the influence of this project.

3. Improvements for school and community. There were no changes in school operations as a result of this project, except in association with the project itself. However, there was very strong interest in the community about the project. Much of this was stimulated for two reasons. One, the community was involved in the project through discussions with the writer and as resource visitors for the project. Second, whenever possible, people were invited to participate from the community. For example, when studying political parties, people from the Democratic Party and the Republican Party were asked to explain and discuss the party principles as well as other characteristics distinguishing them apart from each other. A student who had been studying in Germany as an exchange student in the field of political science discussed the political parties in that country as compared to ours.

V. RECOMMENDATIONS

The writer feels that more work in this area should be done before an adequate evaluation of the value of this method can be reached. It is felt that several years of using this method will refine and improve the procedure. The writer feels that by building up some files with appropriate props, on the different topics to be used in this type of study will make presentations more effective.

If other teachers are interested in using this method in their classes, it is important that several things be taken into consideration. First, an evaluation of the students' abilities and achievements should be keenly observed. Second, it would be expedient to make decisions as to the amount of material to be covered in regard to the resources that are available to the class. This is indeed important in the smaller high schools where library facilities are not equipped for such extensive study. Lending libraries can and should be called upon to insure receiving enough material for the study when it is needed. Third, the units should be developed that would be consistent with the needs that arise from the first two points just discussed. Fourth, it would be most important to make an annotated bibliography of the references used in each investigation, as well as other resources to be consulted, before starting this type of class. Fifth, a criteria for grading should be developed based upon the ability, achievement, desire, interest, and initiative of each student. The writer feels that should be done on a personal basis to insure the best possible development of the student as a whole. Sixth, in each unit study, time should be set aside for individualized study, group discussions, and individual as well as group decisions. These sessions will guide the students in their search for a solution and will help them do some critical thinking upon the subject being investigated. Seventh, the topics should take into consideration the needs, interests, and desires of the students as well as the locality of the school. This is especially true if the teacher is to gain the full attention of the students effort and work. If these recommendations are followed, the writer has no doubt that a class can successfully be challenged to perform to their maximum ability. The need for such a procedure that gives meaning to a course of study is long overdue.